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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/315,390 05/20/99 CRANE

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EXAMINER
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IM52/0425

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ROCHE, L	
ART UNIT	PAPER NUMBER

1771

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*9*

**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trademarks**

# Office Action Summary

Application No.

09/315,390

Applicant(s)

CRANE, STEPHEN

Examiner

Leanna Roche

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) 16-22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☒ Claim(s) 5,6,14 and 15 is/are objected to.
- 8) ☐ Claims \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 May 1999 is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

## Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892)
- 16) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_.
- 18) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_.
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

1. Applicant's election of Group I, Claims 1-15 in Paper No. 8 is acknowledged.

Because Applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse.

### ***Specification***

2. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

Presently, the abstract exceeds 150 words in length.

### ***Drawings***

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "120" has been used to designate both the top skin and the overall composite structure in Figures 7-10. Correction is required.

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4. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: Figures 7 and 8 do not have a top skin 122 (See previous objection). Also Figure 7-10 do not show a foam core 130. Figure 16 does not show a layer combination 373. Correction is required.

5. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: Figures 4-10 show reference numbers 124 and 126, but the specification does not include a description of these features. Correction is required.

#### ***Specification***

6. The disclosure is objected to because of the following informalities: the specification incorrectly refers to the outer layer of the figures as feature 134. Specifically, page 17 line 7 of the specification, which reads "layers 132 and 134 of foam core 130," should read, "layers 132 and 136 of foam core 130." Appropriate correction is required.

#### ***Claim Objections***

7. Claims 5, 6, 14 and 15 are objected to because of the following informalities: in line 3 of each claim, the phrase "an acrylic-polyvinylchloride **form** core" should be changed to read "an acrylic-polyvinylchloride **foam** core." Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

8. Claims 7 and 8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

9. Claims 7 and 8 recite the limitation "said inner layer" in line 2 of both claims. There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 102***

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

11. Claims 1-4, 7 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Kuwazuru et al. (USPN 4579774).

Kuwazuru is directed to a foamed resin sheet with thermoplastic resin layers laminated to both surfaces of the foamed core (Abstract). More specifically, Kuwazuru discloses a foam core comprised of a copolymer of styrene and acrylates (Column 2 lines 1-35) with films of the same material bonded to each face of the foam core (Column 3 lines 15-24). This reads on Applicant's claimed inner and outer acrylic layers attached to a least a portion of an acrylic foam core. The outer layers of the laminate of Kuwazuru may also include suitable resin binders such as ABS resin and polyvinyl

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chloride (Column 4 lines 22-25). This reads on Applicant's claimed outer and/or inner layers of acrylic-ABS or of acrylic-polyvinylchloride attached to a foamed acrylic core.

**12.** Claims 1 and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Honda et al. (USPN 4278728).

Honda is directed to a base material on which is disposed a foamed undercoat layer coated by a top coat layer (Abstract). The foamed undercoat layer of Honda may be comprised of a copolymer of vinyl chloride and acrylic acid esters (Column 1 lines 53-68). The top coat layer may be comprised of a paint comprised of an unsaturated resin such as an epoxy acrylate resin (Column 4 lines 13-27). The foamed undercoat layer of Honda reads on Applicant's foam core of acrylic-polyvinylchloride, and the top coat layer of Honda reads on Applicant's outer layer of acrylic.

**13.** Claims 1 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Akimoto et al. (USPN 4986860).

Akimoto is directed to a lower foamed sheet on which is laminated a thermoplastic resin surface layer (Column 2 lines 34-39). The lower layer foamed sheet may be comprised of a copolymer of vinyl chloride and acrylic acid (Column 3 lines 14-25). The surface layer is comprised of vinyl chloride modified with an acrylic rubber (Column 5 lines 3-15). The lower layer foamed sheet of Honda reads on Applicant's acrylic-polyvinylchloride foam core, and the surface layer of Honda reads on Applicant's acrylic-polyvinylchloride outer layer.

***Claim Rejections - 35 USC § 103***

**14.** The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**15.** Claims 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Steward et al. (USPN 4211590).

Steward et al. is directed to thermoplastic films which are bonded to the face surfaces of an intervening thermoplastic foam core (Column 2 lines 5-7). Both the foam core and the films of the laminate may be comprised of a copolymer of styrene and acrylic (Column 5 lines 4-30). The films may be bonded to the foam core using an adhesive to form the integral laminate (Column 5 lines 60-64).

Steward does not specifically disclose the use of an acrylic adhesive to bind the outer film layers to the foam core. However, it is known in the art that secure bonding between layers occurs when the adhesive and the layers to be bonded are comprised of a similar composition. Therefore, it would have been obvious to a person skilled in the art at the time the invention was made to have used an acrylic adhesive to bind the styrene-acrylic films to the styrene-acrylic foam core, motivated by the desire to produce a laminate with high resistance to layer separation.

**16.** Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Steward et al. (USPN 4211590) as applied to claim 11 above, and further in view of Kuwazuru et al. (USPN 4579774).

Steward does not specifically disclose an outer layer which may be comprised of either an acrylic-ABS or an acrylic-polyvinylchloride. Kuwazuru, however, discloses the use of suitable resin binders such as ABS resin and polyvinyl chloride in the outer layers of the laminate (Column 4 lines 22-25). Kuwazuru explains that the use of these resins helps to prevent shrinkage of the foamed sheet due to the heat applied during the production of the laminate (Column 4 lines 16-20). Therefore, it would have been obvious to the skilled artisan at the time the invention was made to combine the teachings of Kuwazuru and Steward, motivated by the desire to produce a laminate which does not shrink from its original size during the production process.

**17.** Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Steward et al. (USPN 4211590) as applied to claim 11 above, and further in view of Honda et al. (USPN 4278728).

Steward does not specifically disclose a foam core comprised of acrylic-polyvinylchloride. However, Honda discloses the use of a foamed undercoat layer comprised of a copolymer of vinyl chloride and acrylic acid esters (Column 1 lines 53-68). Honda describes the use of reactive plasticizers such as acrylic monomers along with the vinyl chloride of the foam layer to allow the foam layer to be efficiently cured using ultraviolet light (Column 2 lines 17-28). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Steward and Honda, motivated by the desire to obtain a foam layer which may be cured using ultraviolet light instead of heat.



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**18.** Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Steward et al. (USPN 4211590) as applied to claim 11 above, and further in view of Akimoto et al. (USPN 4986860).

Steward does not disclose the use of an outer layer of acrylic-polyvinylchloride and a foam core layer of acrylic-polyvinylchloride, but Akimoto is directed to a lower layer foamed sheet comprised of a copolymer of vinyl chloride and acrylic acid (Column 3 lines 14-25) and a surface layer comprised of vinyl chloride modified with an acrylic rubber (Column 5 lines 3-15). Akimoto explains that the hardness of the surface layer is controlled by the amount and type of modifying agent (such as acrylic rubber) combined with the vinyl chloride base. Therefore, it would have been obvious to combine the teachings of Steward and Akimoto, motivated by the desire to obtain a laminate with the specific hardness desirable for the intended use.

### ***Conclusion***

**19.** The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Also to be noted are the following references which are applicable to the general state of the claims:

Samowich (USPN 4329386)  
Stamper et al. (USPN 4256797)  
Massey et al. (USPN 3755063).

### **Contact Information**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leanna Roche whose telephone number is 703-308-

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6549. The examiner can normally be reached on Monday through Friday from 8:30 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Blaine Copenheaver can be reached on 703-308-1261. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

*Leanna Roche*

lmr  
April 23, 2001

*[Signature]*  
BLAINE COPENHEAVER  
PRIMARY EXAMINER

*[Signature]*  
BLAINE COPENHEAVER  
PRIMARY EXAMINER